

CLAIMS

1. A wireless telephone system (100), comprising:
- a (a) a plurality of wireless handsets (120), each handset (120) comprising a handset transceiver (121, 122) and
  - b (b) a base unit (110) comprising a base transceiver (111, 112) for communicating over an RF channel with each handset via its handset transceiver; and an interface (130) for
  - c interfacing with an external computer (140), characterized in that said interface
  - d comprising: a processor (250), and a phone call linear combiner (230) for selectively combining and routing telephone calls in the system under the control of the processor in accordance with a system configuration, wherein the computer, when interfaced with the base unit via the interface, can communicate with the processor to change the system configuration.
2. The system of claim 1, wherein said interface further comprises a first voice data buffer (241) for receiving voice signals from the processor (250) to be sent to the combiner (230) and a
- a second voice data buffer (242) for receiving voice signals from the combiner (230) to be sent to the
- b processor (250).
3. The system of claim 1, wherein said interface further comprises a control unit (243) for
- a controlling the combiner (230) under the control of the processor (250).
4. The system of claim 1, wherein the selective combining and routing of telephone calls by
- b combiner (230) under the control of the processor (250) comprises at least one of: routing calls from
- c external phone lines (115) to selected handsets (120) or to voice buffers (241, 242) coupled to the
- d processor (250); connecting selected handsets (120) to the processor (250) to retrieve voicemail
- a stored in a RAM (251) of the interface; and merging multiple handsets (120) and/or phone lines
- b (115) to provide conference calls.

a 5. The system of claim 1, wherein said interface (130) further comprises a RAM (251) for  
a storing system configuration data received from the external computer (140).

a 6. The system of claim 1, wherein a given system configuration provided via said external  
a computer (140) further specifies at least one of: which external phone line (115) is a main line and  
a which are rollover lines; the extension numbers of each of the handsets (120); which handset (120)  
a is in secretary mode; and which handsets (120) are added or deleted from the telephone system  
a (100).

7. The system of claim 1, wherein the base transceiver establishes a time-division multiple  
access (TDMA) link over said RF channel with each handset via the handset transceiver in  
accordance with a TDMA time slot structure allocating exclusive audio packet time slots to each  
handset.

a 8. The system of claim 1, wherein the computer (140) further provides one or more features  
a to the system (100), the system further comprising an external port (254) coupled to interface (130),  
the external port and the interface having a bandwidth sufficient to support the provided features.

a 9. The system of claim 1, further comprising a second interface for interfacing with a second  
wireless telephone system, under the control of the external computer (140) to expand overall system  
size.

a 10. In a base unit (110) of a wireless telephone system (100) having the base unit and a  
a plurality of wireless handsets (120), the base unit comprising a base transceiver (111, 112), each  
a handset (120) comprising a handset transceiver (121, 122), a method comprising the steps of:

(a) communicating over an RF channel with each handset via the base transceiver and the  
handset transceiver;

a (b) interfacing with an external computer (140) via an interface (130) of the base unit; and

a (c) controlling, with a processor (250), a phone call linear combiner (230) of the interface;

- a* (d) selectively combining and routing telephone calls in the system, with the combiner (230),  
*a* under the control of the processor (250) in accordance with a system configuration;  
and  
*a* (e) communicating, with the computer (140), with the processor (250) when interfaced with  
the base unit via the interface to change the system configuration.

*a* 11. The method of claim 10, wherein said interface further comprises a first voice data  
*a* buffer (241) for receiving voice signals from the processor (250) to be sent to the combiner (230)  
*a* and a second voice data buffer (242) for receiving voice signals from the combiner (230) to be sent  
to the processor (250).

*a* 12. The method of claim 10, wherein said interface further comprises a control unit (243)  
*a* for controlling the combiner (230) under the control of the processor (250).

*a* 13. The method of claim 10, wherein the selective combining and routing of telephone calls  
*a* by combiner (230) under the control of the processor (250) comprises at least one of: routing calls  
*a* from external phone lines (115) to selected handsets (120) or to voice buffers (241, 242) coupled to  
*a* the processor (250); connecting selected handsets (120) to the processor (250) to retrieve voicemail  
*a* stored in a RAM (251) of the interface; and merging multiple handsets (120) and/or phone lines  
*a* (115) to provide conference calls.

*a* 14. The method of claim 10, wherein said interface (130) further comprises a RAM (251)  
*a* for storing system configuration data received from the external computer (140).

*a* 15. The method of claim 10, wherein a given system configuration provided via said  
*a* external computer (140) further specifies at least one of: which external phone line (115) is a main  
*a* line and which are rollover lines; the extension numbers of each of the handsets (120); which handset  
*a* (120) is in secretary mode; and which handsets (120) are added or deleted from the telephone system  
*a* (100).

16. The method of claim 10, wherein step (a) comprises the step of establishing, with the base transceiver, a TDMA link over the RF channel with each handset via the handset transceiver in accordance with a TDMA time slot structure allocating exclusive audio packet time slots to each handset.

17. The method of claim 10, wherein step (c) further comprises the step of providing one or more features to the system, the system further comprising an external port coupled to interface, the external port and the interface having a bandwidth sufficient to support the provided features.

18. The method of claim 10, comprising the further step of interfacing with a second wireless telephone system via a second interface, under the control of the computer (140), to increase the size of the system (100).

19. A base unit (110) of a wireless telephone system (100) comprising the base unit and a plurality of wireless handsets (120), each handset (120) comprising a handset transceiver (121, 122), the base unit (110) comprising:

(a) a base transceiver (111, 112) for communicating over an RF channel with each handset via its handset transceiver; and

(b) an interface (130) for interfacing with an external computer (140), characterized in that said interface comprising: a processor (250), and a phone call linear combiner (230) for selectively combining and routing telephone calls in the system under the control of the processor in accordance with a system configuration, wherein the computer, when interfaced with the base unit via the interface, can communicate with the processor to change the system configuration.

20. The base unit of claim 19, wherein said interface further comprises a first voice data buffer (241) for receiving voice signals from the processor (250) to be sent to the combiner (230) and a second voice data buffer (242) for receiving voice signals from the combiner (230) to be sent to the processor (250).

a 21. The base unit of claim 20, wherein said interface further comprises a control unit (243) —  
a for controlling the combiner (230) under the control of the processor (250). —

a 22. The base unit of claim 20, wherein the selective combining and routing telephone calls  
a by combiner (230) under the control of the processor (250) comprises at least one of: routing calls  
a from external phone lines (115) to selected handsets (120) or to voice buffers (241, 242) coupled to  
a the processor (250); connecting selected handsets (120) to the processor (250) to retrieve voicemail  
a stored in a RAM (251) of the interface; and merging multiple handsets (120) and/or phone lines  
(115) to provide conference calls.

a 23. The base unit of claim 20, wherein said interface (130) further comprises a RAM (251)  
a for storing system configuration data received from the external computer (140). —

a 24. The base unit of claim 20, wherein a given system configuration provided via said  
a external computer (140) further specifies at least one of: which external phone line (115) is a main  
a line and which are rollover lines; the extension numbers of each of the handsets (120); which handset  
a (120) is in secretary mode; and which handsets (120) are added or deleted from the telephone system  
a (100). —

a 25. The base unit of claim 20, further comprising a second interface for interfacing with a  
a second wireless telephone system, under the control of the computer (140), to expand overall system  
size.

SUBSTITUTE SHEET